KOKEN

Natural premium oil made purely from Japanese rice bran

Squeezed Rice Oil

ORYZA SATIVA (RICE) BRAN OIL

A rice bran oil physically processed from Japanese rice bran

Natural ingredient and production

- Made purely from Japanese rice bran
- Cold-pressed
- Steam refining method

Functional components

- γ-oryzanol
- Super vitamin E
- Phytosterol

Functions

- Moisturizing
- Barrier on the skin
- Skin brightening
- Antiaging (antioxidant)
- UV protection
- Damage care

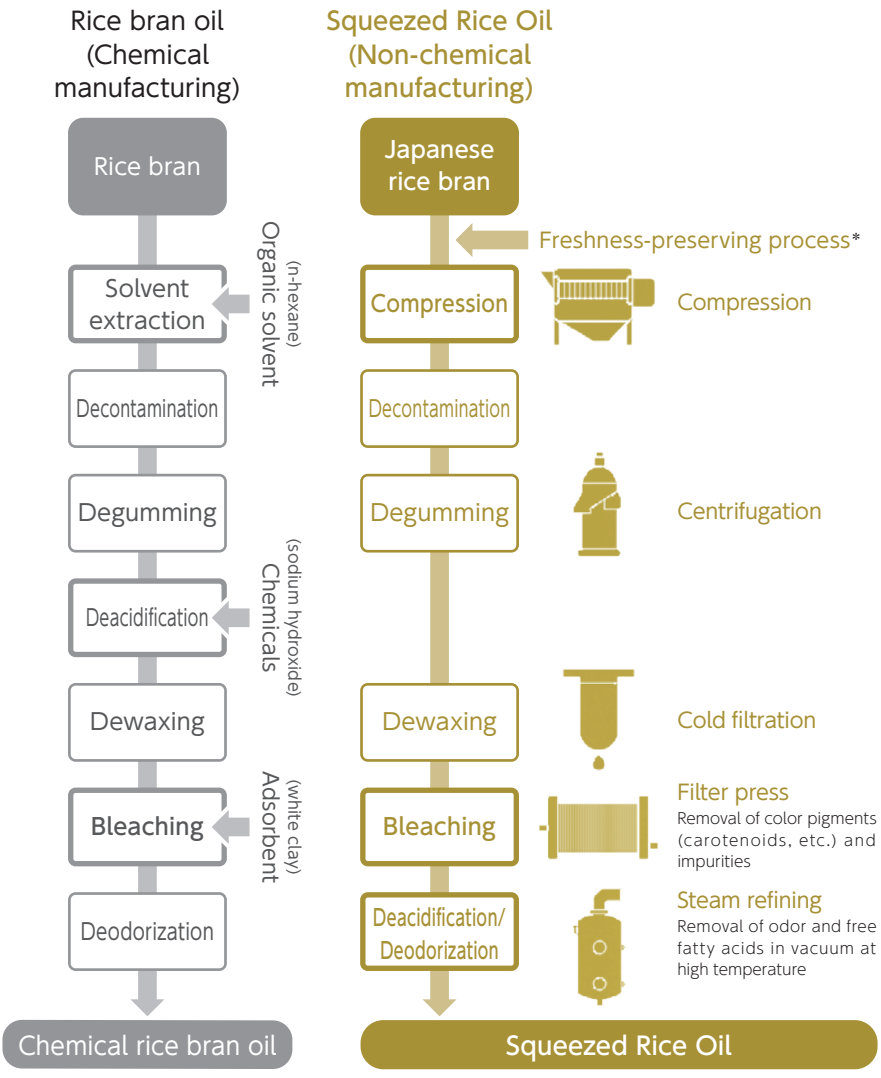
Squeezed Rice Oil was jointly developed by Sanwa Yushi Co., Ltd. and Koken Co., Ltd.

Premium Japanese oil harnessing the natural power of rice bran

Rice bran contains about 80% of the nutrients found in brown rice.
Koken brings out the natural power of rice bran through a non-chemical oil processing method.

Commitment to non-chemical manufacturing

General rice bran oil is manufactured with an organic solvent (n-hexane) and chemical agents (chemical manufacturing), but Koken's Squeezed Rice Oil is obtained through its unique non-chemical processing that does not involve any of these chemicals.



Only a very small amount (about **0.5%**) can be extracted from fresh brown rice.

*Stabilization process

Three key commitments to raw materials and processing method

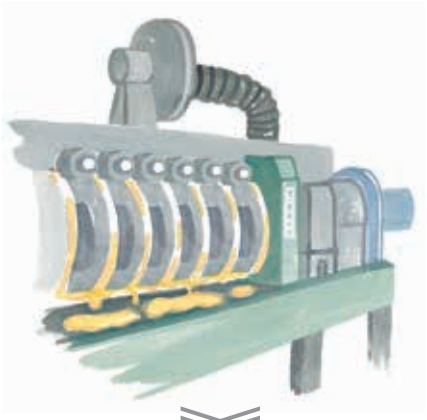
Point 01 Freshness of rice bran

Procurement of fresh ingredients

As rice is milled, the active lipolytic enzymes (lipase) decompose the fat it contains, causing the deterioration (oxidation) of the rice bran. To preserve its freshness, the manufacturing process is carried out domestically within a short period of time, using traceable domestic rice. Our unique freshness-preserving process also makes it possible to use fresh rice bran as a raw material by deactivating the lipase that causes deterioration.*

*Stabilization process

Point 02 Cold-pressing method



Process more naturally

Brown rice yields only a very small amount (about 0.5%) of rice bran oil. Obtained by a cold-pressing method, the precious and highly functional ingredients are trapped in the oil while maintaining the freshness of the rice bran.

Point 03 Non-chemical manufacturing

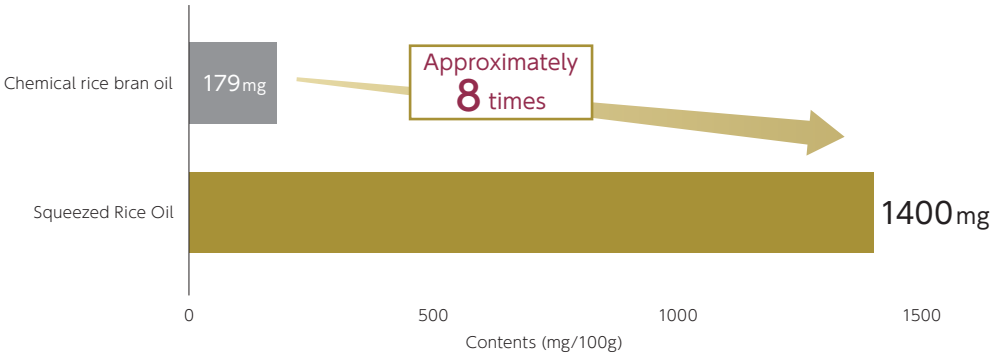
(Steam refining)

Retaining the natural power of rice bran

Holding fast to non-chemical manufacturing, without relying on chemicals with a steam refining method to carefully purify oil over the course of more than a week. Full of power and safe to touch, the high-quality rice bran oil is naturally processed to retain the abundant functional ingredients (unsaponifiable matter) of rice bran.

High γ-oryzanol content: skin brightening and antiaging

γ-oryzanol is a polyphenol component peculiar to rice bran and is an ester mixture of ferulic acid and sterol.



Main functions of γ-oryzanol

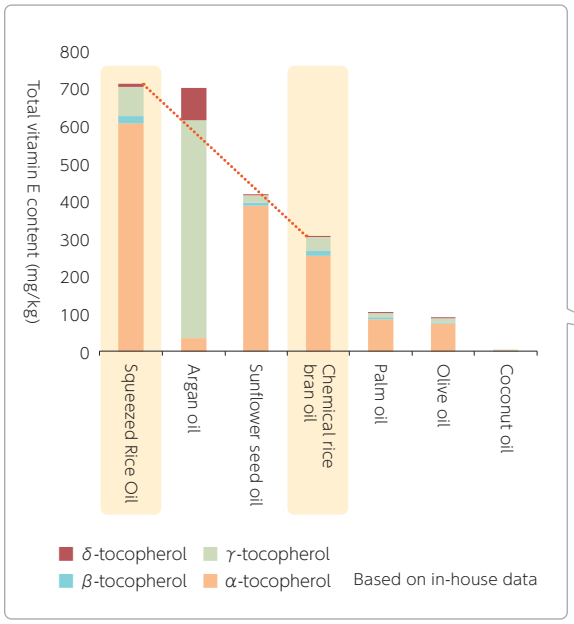
- Skin brightening (inhibition of tyrosinase activity)
- Antiaging (antioxidant)
- UV absorption
- Moisturizing (stimulation of sebum secretion)

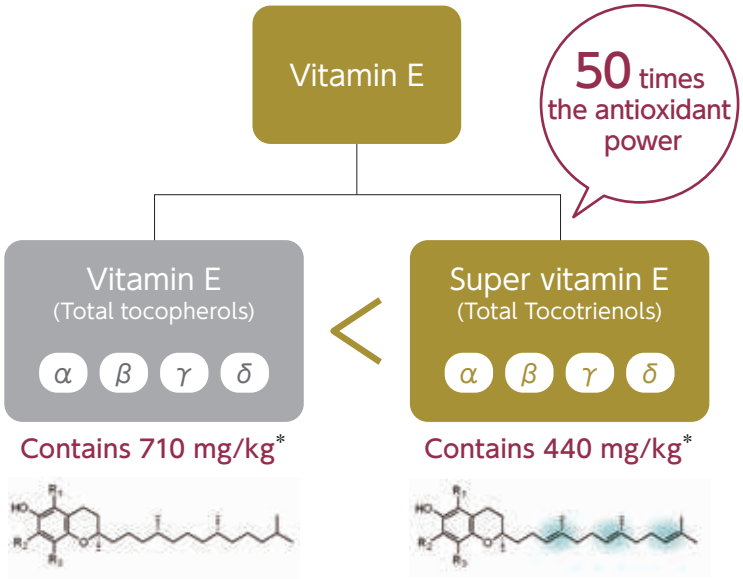
*Data provided by Sanwa Yushi Co., Ltd.

Function

Antioxidant ingredients: Vitamin E/Super vitamin E

Squeezed Rice Oil is rich in vitamin E (about twice as rich as chemically processed rice bran oil), with a particularly high α-tocopherol content (about 17 times greater than argan oil), which acts as an antioxidant *in vivo*, and thereby is expected to have antiaging effects.
It also contains super vitamin E, a rare functional ingredient with 50 times the antioxidant capability of vitamin E, which is expected to improve wrinkles and dark spots and have antiaging effects.

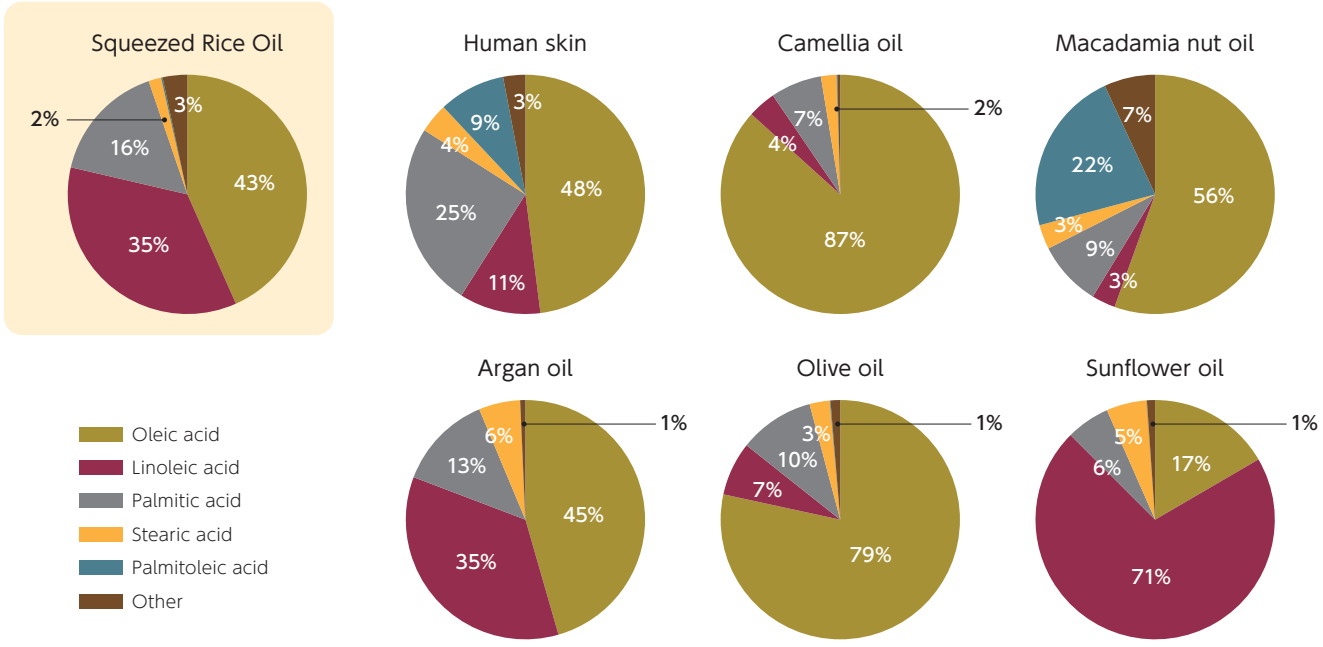




*Data provided by Sanwa Yushi Co., Ltd.

Fatty acid composition

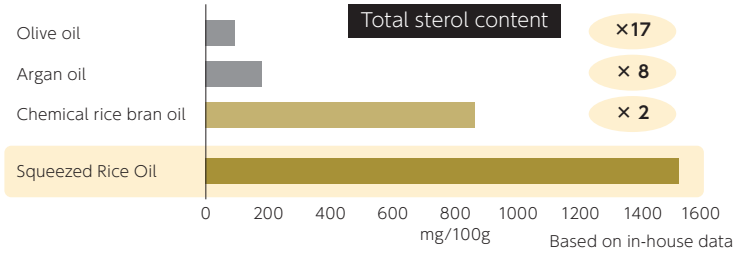
Squeezed Rice Oil is rich in highly stable oleic acid, with its content close to that of human skin, making it well suited to the skin. The fatty acid composition of Squeezed Rice Oil is similar to that of argan oil, which is attracting attention as a beauty oil.



Based on in-house data

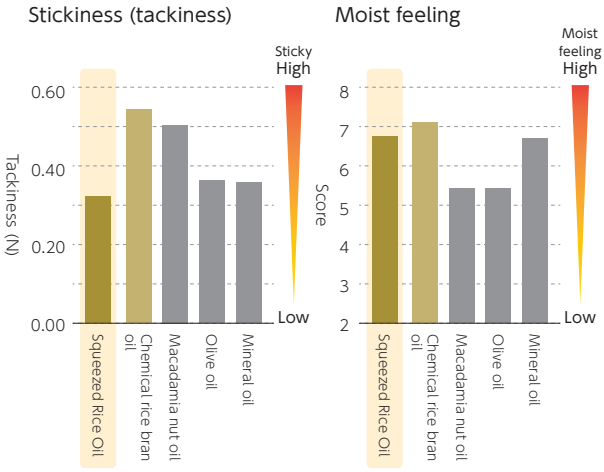
Skin barrier: Phytosterol

In general, the phytosterols in rice bran oil include β-sitosterol, stigmasterol, and campesterol. β-sitosterol, the main component, is an ingredient used in cosmetics to improve the skin's barrier function that protects itself from damage caused by chemical substances and UV rays.



Squeezed Rice Oil contains more phytosterol, which has moisturizing and skin barrier effects. (About twice as much as chemical rice bran oil, about 8 times as much as argan oil, about 17 times as much as olive oil)

Texture



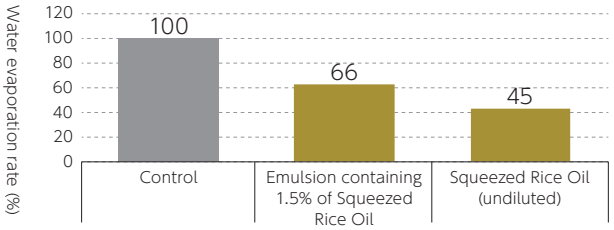
It feels moist but less sticky.

Based on in-house data

Skin barrier and moisturizing

Water evaporation rate (*In vitro* test)

Emulsion blended with each sample and undiluted oil are separately applied to an agar medium, and after standing for 24 hours the amount of evaporated water is measured, and the water evaporation rate is calculated.



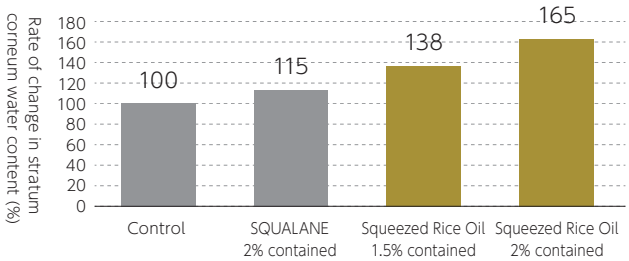
Evaporation of water decreases by about 34% when the emulsion is blended with 1.5% or more of Squeezed Rice Oil and by about 55% in the case of undiluted oil.

It shows that Squeezed Rice Oil has a high water evaporation suppression effect.

Based on in-house data

Moisturizing effect (human study)

Emulsion blended with each sample is applied, and after 5 minutes the percent change of the amount of keratin water is calculated.



Moisturizing effect increases by about 40% when emulsion is blended with 1.5% or more of Squeezed Rice Oil.

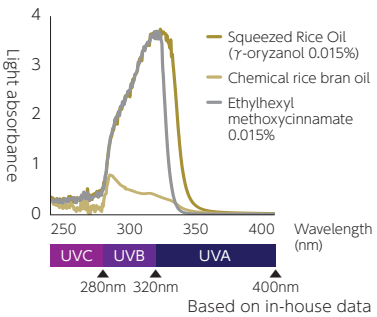
It shows that Squeezed Rice Oil has a higher moisturizing effect than squalane.

Based on in-house data

UV absorption (UV protection)

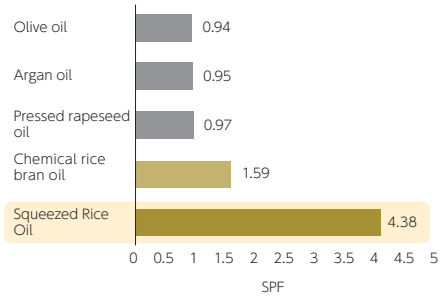
Test method: The absorbance and SPF of each sample are measured using an absorbance and SPF analyzer.

Light absorbance



Based on in-house data

SPF Analyzer

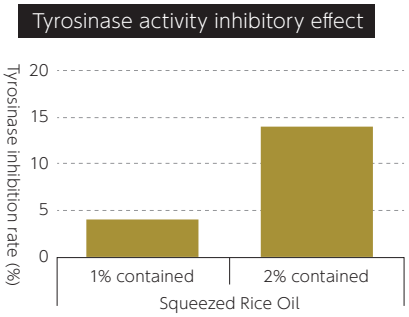


Based on in-house data

The rich γ-oryzanol found in Squeezed Rice Oil absorbs UVA and UVB rays.
With the absorption mechanism derived from the ferulic acid structural skeleton, Squeezed Rice Oil exhibits UV absorption similar to that of ethylhexyl methoxycinnamate, a UVB protective filter.

Tyrosinase activity inhibitory effect

Test method: Squeezed Rice Oil, tyrosinase, and L-DOPA are made to react, and the tyrosinase inhibition rate is calculated by measuring the absorbance.



Based on in-house data

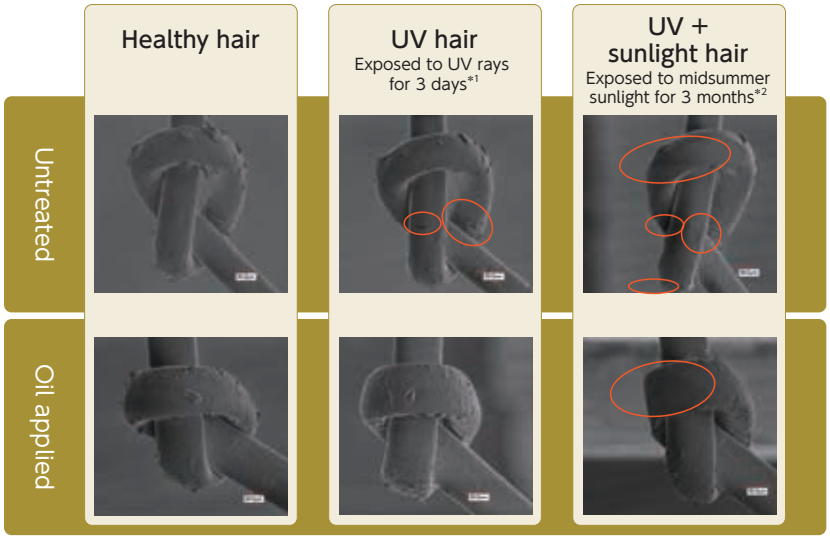
Squeezed Rice Oil has a concentration-dependent inhibitory effect on tyrosinase activity.

Squeezed Rice Oil is a unique and eco-friendly botanical oil that can be expected to offer UV protection and brightening effects for skin.

Hair data

Hair protection effect (UV/sunlight)

Test method: Untreated and oil-applied healthy hair is irradiated with UV and sunlight, and hair condition is observed with a scanning electron microscope (SEM).



⬭ ··· Damage/loss of cuticle

Less damage when oil is applied than when untreated.

Protective effect against UV rays and sunlight

The application of Squeezed Rice Oil can be expected to protect hair from UV rays.

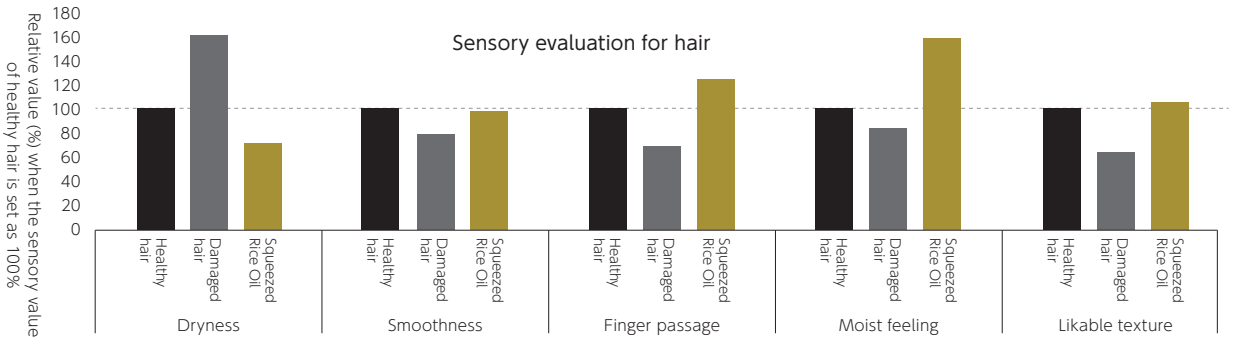
*1 UV treatment: Irradiated by 254nm wavelength UV radiation for 3 J/cm² (daily total UVB exposure is 1-2 J/cm²)
*2 Sunlight treatment: Irradiated with light at a wavelength of 300-800nm for 6.5 hours (a total of 1,800J/cm², equivalent to 3 months of exposure when spending an hour outside at noon in midsummer)

Based on in-house data

Damage care effect

Damage care effect

Test method: Squeezed Rice Oil is applied to damaged hair, and sensory evaluation is conducted to compare it with healthy and damaged hair.

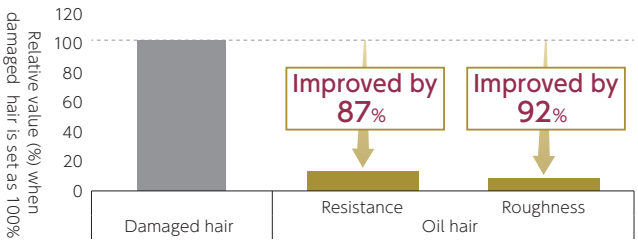


With the application of Squeezed Rice Oil, the dryness, smoothness, passage of fingers through the hair, and moist feeling of bleached damaged hair are improved to the same as or better than healthy hair, and the hair texture is also improved to the same level as healthy hair.

Based on in-house data

Smooth combing

Test method: Resistance and roughness of damaged hair and oil hair (damaged hair with Squeezed Rice Oil applied to it) are measured with a friction meter to evaluate how smoothly the hair flows through a comb.

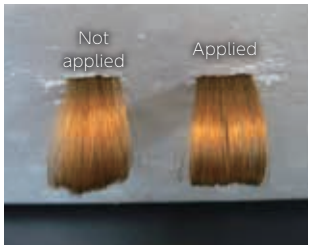


Squeezed Rice Oil improves resistance and roughness experienced when combing damaged hair, leading to smoother hair.

Based on in-house data

Spreading

Gloss



Based on in-house data

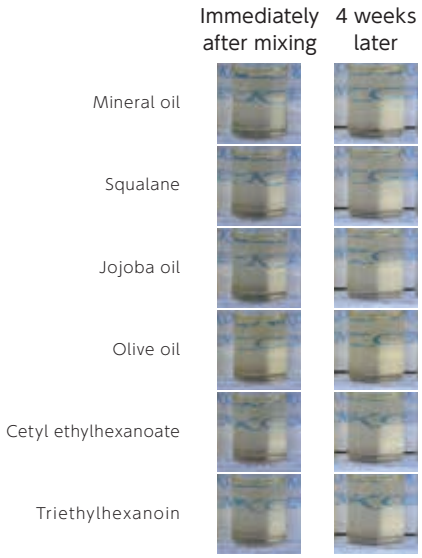
The application of Squeezed Rice Oil prevents hair from spreading due to damage for a manageable and glossy finish.

Basic physical properties

BOTANICAL

Compatibility with other oils

Test method: After mixing 50% of Squeezed Rice Oil and 50% of each oil agent, it is stored at room temperature for 4 weeks and observed over time.

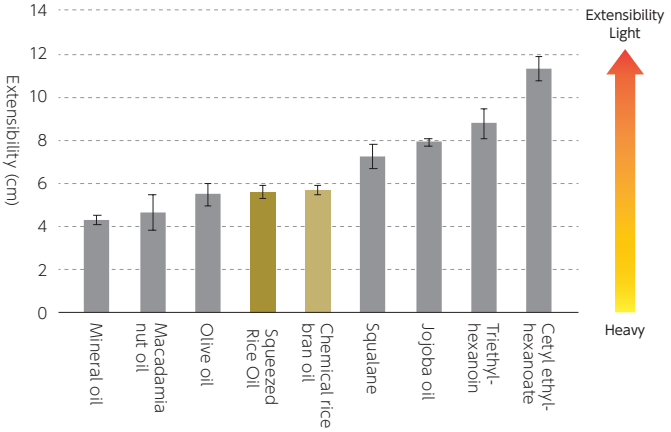


Based on in-house data

There are no compatibility problems with any of the oils.

Oil extensibility

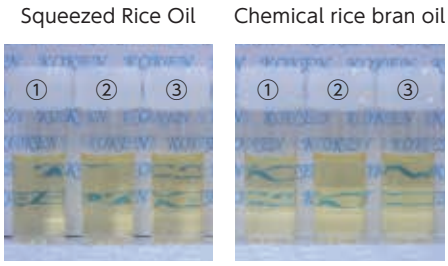
Test method: 20μL of each sample was placed on artificial skin that was placed vertically, and after 30 seconds the position of the oil is measured to evaluate extensibility. (n=3)



Squeezed Rice Oil spreads more easily than mineral oil and macadamia nut oil, and its extensibility is similar to olive oil. There is no difference from chemically refined oil.

Based on in-house data

Appearance (difference between lots)

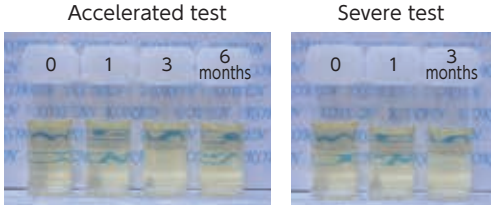


Based on in-house data

There is no difference in appearance between lots.
There is no difference from chemical rice bran oil, so replacement is possible.

Temporal stability

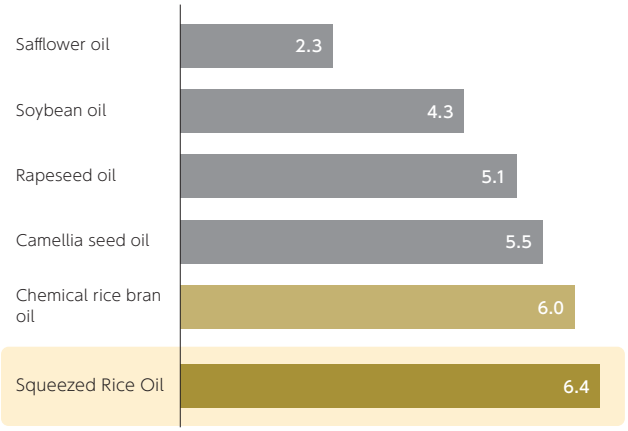
Test method: Samples stored under the conditions of an accelerated test (40℃, 75% RH) and a severe test (55℃) are checked for appearance and tested in accordance with raw material standards.



Based on in-house data

The results of the accelerated and severe test show that stability is in accordance with product specifications.

Oxidative stability CDM (120℃)



Squeezed Rice Oil has a higher oxidative stability than chemical rice bran oil and other botanical oils.

Based on in-house data

Specifications

Specifications	Standard value	Test method
Properties	Light yellow liquid with a slight peculiar odor	Sensory test
Confirmation test	Absorption is observed near wavenumbers of 2930cm^{-1}, 2860cm^{-1}, 1745cm^{-1}, and 1165cm^{-1}.	Japanese standards of Quasi-drug Ingredients (Rice Bran Oil)
Acid value	0.3 or less	Japanese standards of Quasi-drug Ingredients (Rice Bran Oil) Acid value measurement method, Method 2 Indicator: Alkali Blue 6B
Saponification value	170～200	Japanese standards of Quasi-drug Ingredients (Rice Bran Oil)
Lodine value	90～120	Japanese standards of Quasi-drug Ingredients (Rice Bran Oil)
Unsaponification value	10% or more	Japanese standards of Quasi-drug Ingredients (Rice Bran Oil)
γ-oryzanol	1.2% or more	UV-visible absorbance measurement method

The γ-oryzanol content is standardized.

(Reference value) Specific gravity: 0.921 (25℃), Freezing point: -5.5℃

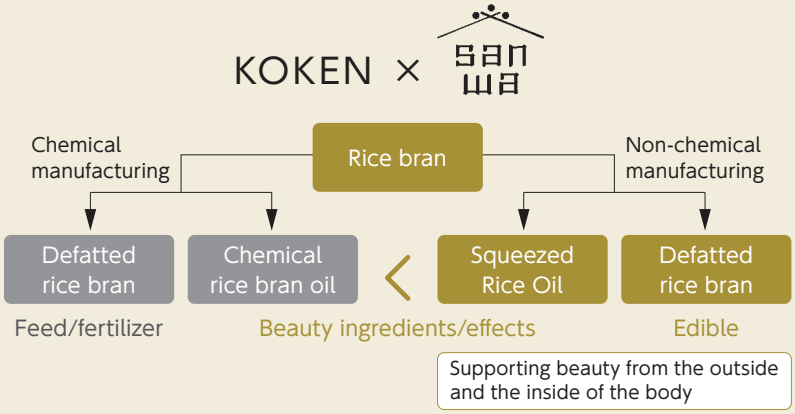
Based on in-house data

Pursuing the potentiality of rice

Koken realizes a sustainable and environmentally friendly manufacturing method through a circular production and consumption scheme that follows the principle of local production for local consumption.

Rice bran oil, a botanical oil that can be produced domestically

Rice bran oil is a typical botanical oil that can be produced domestically. Rice, a central ingredient of the food culture of Japan since ancient times, can be said to be a Japanese beauty secret.
Non-chemical method is an environmentally friendly, natural approach to oil processing.
We would like to create new value from rice by combining Sanwa Yushi's advanced technology with our expertise in cosmetics.



Recommended formulation ratio: 1.5% to undiluted

Safety evaluation:	Human Repeat Insult Patch Test (HRIPT)	Completed
	Skin irritation alternative test (OECD TG439)	No irritation
	Eye irritation test (RhCE)	No irritation
	Phototoxicity test (3T3-NR method)	Negative

Product number	Product name	INCI name/中文名称	Other ingredients	Package	Sample
RBS-105	Squeezed Rice Oil	ORYZA SATIVA (RICE) BRAN OIL 稻(ORYZA SATIVA)糠油	—	16.5kg	50g

The country of origin: Japan　The place of origin: Japan
Natural Index･Natural Origin Index :1 (ISO16128, not including formulation water)

Contact

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